

We put science to work.™

SRNL is a DOE National Laboratory
operated by Savannah River Nuclear Solutions.

Facts

about Savannah River National Laboratory

U.S. DEPARTMENT OF ENERGY • SAVANNAH RIVER SITE • AIKEN • SC

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SRNL Fast Facts

- > Located at the U.S. Department of Energy's Savannah River Site near Aiken, South Carolina
- > Operated by Savannah River Nuclear Solutions
- > "National Laboratory" for DOE Office of Environmental Management
- > Applied research, development and deployment of practical, high-value and cost-effective nuclear materials management and technology solutions in the areas of national security, clean energy and environmental stewardship
- > Supporting customers at SRS, DOE and other federal agencies nationally and internationally

Contact Information

SRNL Office of Communications
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Integrated Capability: Nuclear Materials Process Design, Development and Demonstration

Outcomes

- Process Flowsheet Development: Simulation, modeling and testing (Defense Waste Processing Facility, Saltstone, ARP/MCU, H Canyon/HB Line, etc.)
- Process Flowsheet Validation: Bench-scale, real-materials testing through pilot-scale testing
- Process Feed Characterization and Qualification
- Product/End state validation and confirmation for regulators and stakeholders
- Equipment and instrumentation development and testing
- Process Improvement and Troubleshooting: Modeling, analysis, process testing capabilities

Core Competencies necessary to this capability

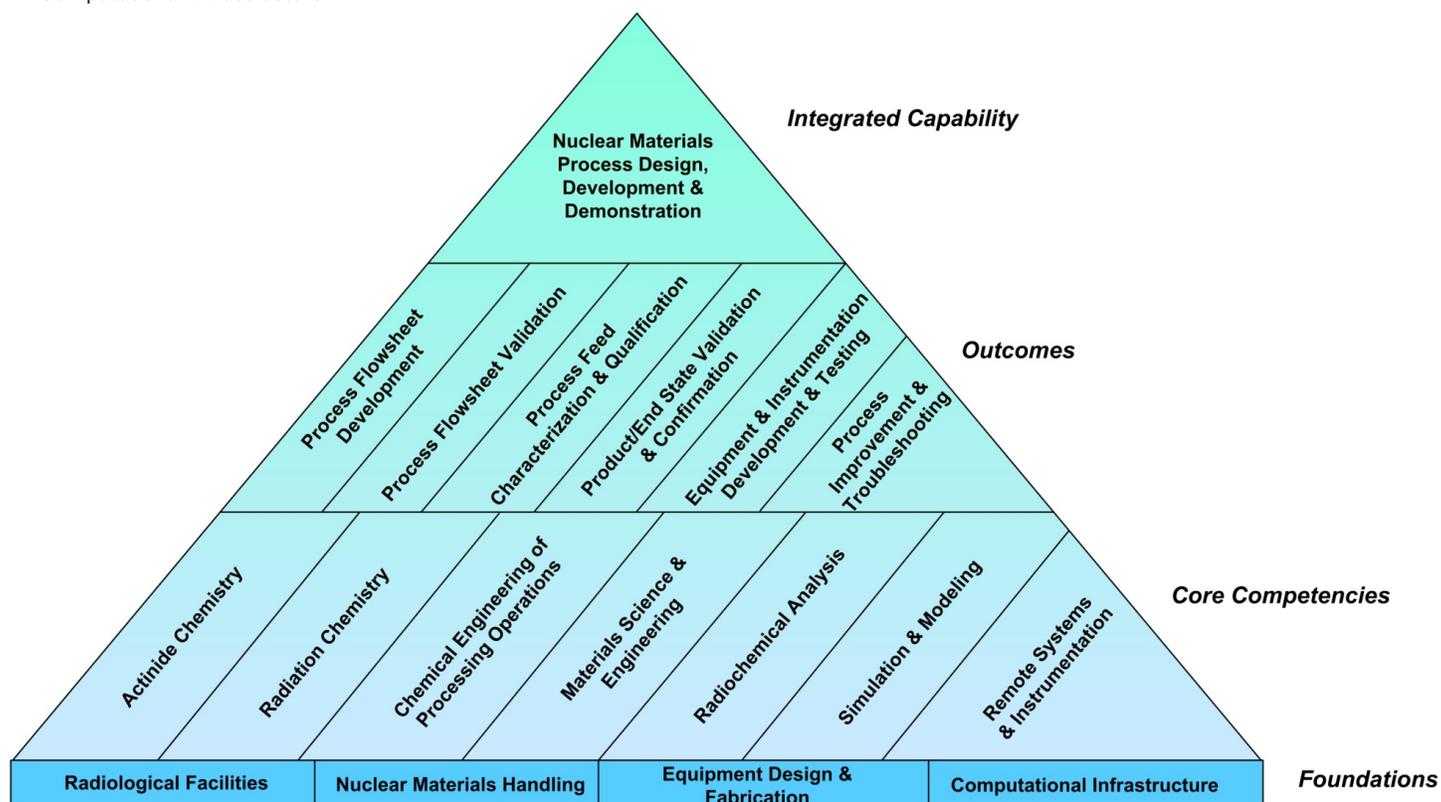
- Actinide Chemistry: Foundation for design, development and deployment of nuclear materials processing at the Savannah River Site (SRS)
- Radiation Chemistry: Fundamental understanding of chemical processes and behavior in radiological environment
- Chemical Engineering of Processing Operations: Requires fundamental understanding of chemical behavior, kinetics, equipment performance, etc. Requires in-depth knowledge and experience with Environmental Management processes and expertise in separations chemistry
- Materials Science and Engineering: Wasteforms, corrosion, erosion, materials of construction
- Radiochemical Analysis: People and equipment (contained instrumentation, gloveboxes, etc.) necessary to enable process development and validation
- Simulation and Modeling
- Remote Systems and Instrumentation: Sampling, equipment modifications, etc.

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Foundations of the capability

- Radiological Facilities: Shielded cells, gloveboxes, radiohoods, etc.
- Nuclear Material Handling Capabilities: People and equipment (gloveboxes, high level cells, etc.) necessary to enable process development and validation with actual radiological materials
- Equipment Design and Fabrication Capabilities
- Computational Infrastructure



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